

Thesis Title	Prevalence of <i>Salmonella</i> and <i>Campylobacter</i> spp. from Broiler Meat in Abattoirs at Ho Chi Minh City, Vietnam
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ABSTRACT

Over the past 20 years poultry meat production worldwide has increased rapidly with an annual growth rate of 6%. In Ho Chi Minh City, the animal husbandry has rapidly developed, especially in poultry production. The increase has been in both the number the farms and flock sizes. Fifty five poultry abattoirs are operated in this city. This enables poultry processors to slaughter large number of animal. However, there was very little information about the contamination of *Salmonella* in broiler carcasses. Similarly, there was paucity of data about *Campylobacter* in broiler meat. Poultry and poultry products are important vehicles of food- born illnesses in humans, especially salmonellosis and campylobacteriosis.

Therefore, this study was done to establish the prevalence of *Salmonella* and *Campylobacter* spp. in chicken carcasses in 15 abattoirs (large and small). Abattoir were categorized as large if the daily slaughter was between 1200- 2000 chickens, and small if less than 1200 chickens. From November 2004 to May 2005, 319 chicken carcass- rinse samples were collected. All were examined for the presence of *Salmonella* and *Campylobacter*. The samples were obtained from the final product at the inside –outside shower stage of the slaughter processing and were collected using the procedure described in USDA (2002). [Briefly, the carcass was put into a plastic bag (30 cm ×60 cm) and four hundred ml of Buffered Peptone Water (Oxiod, CM 509) was added into the bag. The isolation procedure followed ISO and serotyping identification for *Salmonella* followed the instruction from manufacture (Sifin,

Germany)]. Out of 319 samples, 136 chicken carcasses were *Salmonella*- positive giving a prevalence of 42.63%. In the small abattoirs a prevalence of 47.96% was obtained, while, in large abattoirs a prevalence of 34.15% was recorded. These two proportions were different ($p = 0.152$). Overall, *S. Emek* (33.3 %), *S. Haardt* (18.42%), *S. Typhimurium* (7.89%), and *S. London* (7.02%) were the most prevalent serotypes. Nine *Salmonella* isolates of *S. Typhimurium* were found in five abattoirs.

Campylobacter spp. was isolated from 35.11% of the 319 chicken carcasses. The occurrence *Campylobacter* spp. was marginally higher (36.58%) in the large abattoirs than in the small abattoirs (34.18%) ($p = 0.6618$). Overall, the combined proportion of the occurrence of *Salmonella* and *Campylobacter* in 319 chicken carcasses was 17.87%. In conclusion, presence of *Salmonella* and *Campylobacter* spp. in chicken carcasses pose potential sources of foodborne hazards to humans. Therefore, based on these findings it is strongly recommended that effective hygienic standards along the poultry slaughter line be implemented. In addition, further studies should be designed to establish the specific critical points in whole poultry production chain (farm to table).

Salmonella ที่พบบ่อยที่สุดเป็น S. Emek 33.3 % , S. Haardt 18.42 % , S.Typhimurium 7.89 % และ S. London 7.02 % พบ S.Typhimurium จำนวน 9 ครั้ง จากโรงฆ่าสัตว์ 5 แห่ง

ได้พบ Campylobacter spp. จำนวน 35.11 % จากซากไก่ 319 ตัวอย่าง พบ Campylobacter จากตัวอย่างจากโรงฆ่าสัตว์ขนาดใหญ่ 36.58 % ซึ่งมากกว่าตัวอย่างจากโรงฆ่าสัตว์ขนาดเล็กจำนวนเล็กน้อย คือจากโรงฆ่าสัตว์ขนาดเล็กพบ 34.18 % ($p=0.6618$) ตัวอย่างที่พบทั้ง Salmonella และ Campylobacter จากตัวอย่างทั้งหมด 319 ตัวอย่าง คือ 17.87 % สรุปได้ว่าทั้ง Salmonella และ Campylobacter spp.ในซากไก่ ต่างมีแนวโน้มที่จะเป็นตัวอันตรายทำให้เกิดโรคอาหารเป็นพิษ ในคน ดังนั้นจากผลการศึกษานี้จึงต้องแนะนำอย่างแรงกล้าให้มีการนำระบบมาตรฐานด้านสุขอนามัยไปใช้ในกระบวนการผลิตของโรงฆ่าสัตว์ประเภทสัตว์ปีกอย่างมีประสิทธิภาพ ในการศึกษารั้งต่อไปควรวางแผนการศึกษาการตรวจหาจุดควบคุมวิกฤติโดยเฉพาะของห่วงโซ่ของกระบวนการผลิตสัตว์ปีก (จากฟาร์มถึงโต๊ะอาหาร)